

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

K-2006

Applicant : Hiromitsu Seto et al
Title : GLASS COMPOSITION
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Filed : September 28, 2001
Group Art Unit :
Examiner :

Hon. Commissioner of Patents and Trademarks
Washington, D. C. 20231

September 28, 2001

PRELIMINARY AMENDMENT

Sir:

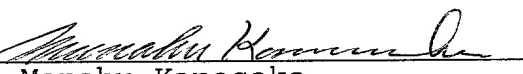
Preliminary to examination, please amend the claims 3, 4, 5, 6, 7, 8, 10, 11 and 12 as attached herewith.

REMARKS

The preliminary amendment has been filed to change multiple dependency of claims 3, 4, 5, 6, 7, 8, 10, 11 and 12 to single dependency.

Respectfully submitted,

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Amended claims:

3. (Amended) A glass composition as claimed in claim 1 [or 2], wherein a total iron oxide (T-Fe₂O₃) expressed as Fe₂O₃ is 0.4-1.9 wt.% and,

5 the glass composition with a thickness from 1 to 6 mm has a solar energy transmittance of not greater than 60% and ultraviolet transmittance of not greater than 30% defined by ISO.

10 4. (Amended) A glass composition as claimed in [any one of] claim[s] 1 [thorough 3], wherein the glass composition comprises 0.4-1 wt.% total iron oxide (T-Fe₂O₃) expressed as Fe₂O₃ and 0.01-0.40 wt.% TiO₂ and has a visible light transmittance of not smaller than 70% measured by the illuminant "A" with a thickness from 1 to 6mm.

15 5. (Amended) A glass composition as claimed in [any one of] claim[s] 1 [thorough 4], wherein the glass composition comprises 0.4-0.65 wt.% total iron oxide (T-Fe₂O₃) expressed as Fe₂O₃ wherein a FeO ratio expressed as Fe₂O₃ against the total iron oxide (T-Fe₂O₃) is 20-60 wt.%;

20 not smaller than 0.01wt.% and smaller than 0.20wt.% TiO₂; and 0.1-2.0 wt.% CeO₂, and

wherein the glass composition with a thickness from 3.5 to 5.0 mm has the visible light transmittance of not smaller than 70 %, the solar energy transmittance of not greater than 55% and the ultraviolet transmittance of not greater than 15% defined by ISO when measured by using the illuminant "A".

6. (Amended) A glass composition as claimed in [any one of] claim[s] 1 [thorough 4], wherein the glass composition comprises:
greater than 0.65wt.% and not greater than 0.90wt.% total ion oxide (T-Fe₂O₃) expressed as Fe₂O₃;
0.01-0.40wt.% TiO₂; and
greater than 1.4wt.% and not greater than 2.0wt.% CeO₂,
a FeO ration expressed as Fe₂O₃ against the total ion oxide (T-Fe₂O₃) is 20-60 wt.%, and

the glass composition with a thickness from 1.8 to 4.0 mm has the visible light transmittance of not smaller than 70 %, the solar energy transmittance of not greater than 55% and the ultraviolet transmittance of not greater than 15% defined by ISO when measured by using the illuminant "A".

7. (Amended) A glass composition as claimed in [any one of]

claim[s] 1 [thorough 6], wherein the glass composition comprises:

smaller than 0.005 wt.% CoO;

not greater than 0.01 wt.% NiO; and

not greater than 0.001 wt.% Se.

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8. (Amended) A glass composition as claimed in [any one of] claim[s] 1 [thorough 3], wherein the glass composition comprises:

0.9-1.9 wt.% T-Fe₂O₃;

0.005-0.05 wt.% CoO;

0-0.2 wt.% NiO; and

0-0.005 wt.% Se.

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10. (Amended) A glass composition as claimed in [any one of] claim[s] 1 [thorough 9], wherein the product of the mean linear expansion coefficient in a range of 50-350°C and Young's modulus is 0.71-0.90 MPa/°C.

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11. (Amended) A glass composition as claimed in [any one of] claim[s] 1 [thorough 10], wherein the mean linear expansion coefficient in a range of 50-350°C is 80×10^{-7} - 110×10^{-7} /°C.

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12. (Amended) A glass composition as claimed in [any one of] claim[s] 1 [thorough 11], wherein the density measured at an ambient temperature is greater than 2.47g/cm^3 and not greater than 2.65 g/cm^3 .

Amended claims:

3. (Amended) A glass composition as claimed in claim 1, wherein a total ion oxide (T-Fe₂O₃) expressed as Fe₂O₃ is 0.4-1.9 wt.% and,

the glass composition with a thickness from 1 to 6 mm has a solar energy transmittance of not greater than 60% and ultraviolet transmittance of not greater than 30% defined by ISO.

4. (Amended) A glass composition as claimed in claim 1, wherein the glass composition comprises 0.4-1 wt.% total ion oxide (T-Fe₂O₃) expressed as Fe₂O₃ and 0.01-0.40 wt.% TiO₂ and has a visible light transmittance of not smaller than 70% measured by the illuminant "A" with a thickness from 1 to 6mm.

5. (Amended) A glass composition as claimed in claim 1, wherein the glass composition comprises

0.4-0.65 wt.% total ion oxide (T-Fe₂O₃) expressed as Fe₂O₃ wherein a FeO ratio expressed as Fe₂O₃ against the total ion oxide (T-Fe₂O₃) is 20-60 wt.%;

not smaller than 0.01wt.% and smaller than 0.20wt.% TiO₂; and

0.1-2.0 wt.% CeO₂, and

wherein the glass composition with a thickness from 3.5 to 5.0 mm has the visible light transmittance of not smaller than 70 %, the solar

energy transmittance of not greater than 55% and the ultraviolet transmittance of not greater than 15% defined by ISO when measured by using the illuminant "A".

5 6. (Amended) A glass composition as claimed in claim 1, wherein the glass composition comprises:
greater than 0.65wt.% and not greater than 0.90wt.% total ion oxide (T-Fe₂O₃) expressed as Fe₂O₃;
0.01-0.40wt.% TiO₂; and
10 greater than 1.4wt.% and not greater than 2.0wt.% CeO₂,
a FeO ration expressed as Fe₂O₃ against the total ion oxide (T-Fe₂O₃) is 20-60 wt.%, and
the glass composition with a thickness from 1.8 to 4.0 mm has the visible light transmittance of not smaller than 70 %, the solar energy
15 transmittance of not greater than 55% and the ultraviolet transmittance of not greater than 15% defined by ISO when measured by using the illuminant "A".

20 7. (Amended) A glass composition as claimed in claim 1, wherein the glass composition comprises:
smaller than 0.005 wt.% CoO;
not greater than 0.01 wt.% NiO; and

not greater than 0.001 wt.% Se.

8. (Amended) A glass composition as claimed in claim 1, wherein the glass composition comprises:

0.9-1.9 wt.% T-Fe₂O₃;

0.005-0.05 wt.% CoO;

0-0.2 wt.% NiO; and

0-0.005 wt.% Se.

10. (Amended) A glass composition as claimed in claim 1, wherein the product of the mean linear expansion coefficient in a range of 50-350°C and Young's modulus is 0.71-0.90 MPa/°C.

11. (Amended) A glass composition as claimed in claim 1, wherein the mean linear expansion coefficient in a range of 50-350°C is 80x10⁻⁷-110x10⁻⁷/°C.

12. (Amended) A glass composition as claimed in claim 1, wherein the density measured at an ambient temperature is greater than 2.47g/cm³ and not greater than 2.65 g/cm³.